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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/565,215	11/17/2006	Motoki Hiraoka	02886.0096	9158

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FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER LLP
901 NEW YORK AVENUE, NW
WASHINGTON, DC 20001-4413

EXAMINER	
AHMED, SHEEBA	

ART UNIT	PAPER NUMBER
1794	

MAIL DATE	DELIVERY MODE
08/03/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/565,215	HIRAOKA ET AL.	
	Examiner	Art Unit	
	SHEEBA AHMED	1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 April 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5* is/are pending in the application.

4a) Of the above claim(s) *4 and 5* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *1/20/06; 7/18/08; 12/4/08*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group I, claims 1-3, in the reply filed on April 17, 2009 is acknowledged. Claims 1-5 are pending of which claims 1-3 are now under consideration.

Specification

2. The Specification refers to the claims and what is recited in each claim and such reference to the claims by claim number in the body of the Specification is improper. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-3 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites "a resin substrate having a resin-metal composite layer that metallic particles are dispersed in a resin matrix at a surface of the resin substrate". The language of claim 1 is awkward and ambiguous. However, for purposes of examination, the Examiner has interpreted claim 1 to recite a resin substrate having a resin-metal composite on the surface of the resin substrate and wherein the resin-metal composite

layer comprises metallic particles dispersed in a resin matrix. Appropriate amendment or clarification is required.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-3 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a resin substrate having a resin-metal composite on the surface of the resin substrate and wherein the resin-metal composite layer comprises 20 to 90% by volume of metallic particles dispersed in a resin matrix and has a thickness of 20 to 2000 nm, does not reasonably provide enablement for a resin substrate having a resin-metal composite on the surface of the resin substrate and wherein the resin-metal composite layer comprises metallic particles dispersed in a resin matrix. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to practice the invention commensurate in scope with these claims.

Paragraph [0022]- [0024] of the Specification filed on January 20, 2006 state that "the concentration of metallic particles in the resin-metal composite layer varies according to the type of resins and metals or features objecting at. Generally it belongs from 20 to 90 % in volume. When the concentration is less than 20 volume %, it is difficult to achieve the features of conductivity, abrasion resistance and the like. While when the concentration is more than 90 % in volume, the characteristics of the resin

tend to disappear. Moreover, when a resin-metal composite layer is utilized as a clear conductive layer, for instance, transparent or semi-transparent resin substrates such as polycarbonate resin, PMMA resin and AS resin can be employed to form a resin-metal composite layer. In the resin matrix of the surface of the resin-metal composite layer, the particles of a conductive metal such as Au, Ag and Cu homogeneously disperse in the range of 20 to 70 volume %. When the concentration of the metallic particles is over 70 % in volume, depending on the thickness of the resin-metal composite layer, translucency is decreased, so it is not preferable. It is preferable that a resin-metal composite layer is formed in the range of 20 to 2000 nm in thickness. To ensure the translucency, it is preferable that the thickness is 200 nm or less than 200 nm. When the thickness is less than 20 nm, it is difficult to achieve the features of conductivity and abrasion resistance, and when it is over 2000 nm, the characteristics of the resin disappear. Further, for giving electric conductivity, depending on the concentration of metallic particles, it is preferable that it is over 50 nm in thickness".

Hence, the above-mentioned portions of the Specification indicate that the concentration of the particles and the thickness of the resin-metal composite layer are critical to the invention.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Matsufugi et al. (US 2002/0018886 A1).

Matsufugi et al. disclose a hard coat film comprising; a transparent support; and a hard coat layer thereon; the hard coat layer containing surface-treated inorganic fine particles and a crosslinked binder polymer (Abstract). The hard coat film is formed by providing a specified hard coat layer on a transparent support. It is preferable to use a plastic film as the transparent support, and more preferable to use a transparent support film comprising a polyester film (Paragraph 0045). The hard coat layer has the function of introducing abrasion resistance to the transparent support and comprises a specified hard coat layer on a transparent support (paragraph 0093). The hard coat layer contains a crosslinked polymer. The hard coat layer containing a crosslinked polymer can be formed by coating a coating liquid containing a radiation polymerizable polyfunctional compound and polymerization initiator on a transparent support and polymerizing the radiation polymerizable polyfunctional compound (paragraph 0094). With regard to the inorganic fine particles, those having high hardness are preferred, and inorganic particles having a hardness of at least 6 on the Mohs scale are more preferred. For example, particles of silicon dioxide, titanium dioxide, zirconium oxide, aluminum oxide, tin oxide, calcium carbonate, barium sulfate, talc, kaolin and calcium sulfate are included. Among the above-mentioned particles, particles of silicon dioxide, titanium dioxide, aluminum oxide and zirconium oxide are particularly preferred (paragraph 100). The thickness of the hard coat layer is desirably 2 to 30 microns,

(paragraph 169). All limitations of claims 1-3 are disclosed in the above reference.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to SHEEBA AHMED whose telephone number is (571)272-1504. The examiner can normally be reached on Monday-Friday from 8am to 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie Shosho can be reached on (571)272-1123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Sheeba Ahmed/
Primary Examiner, Art Unit 1794